

# Mammalia, Chiroptera, Vespertilionidae *Rhogeessa hussoni* Genoways and Baker, 1996: First record for the state of Sergipe, northeastern Brazil

Jefferson S. Mikalauskas<sup>1\*</sup>, Patrício A. da Rocha<sup>2</sup>, Daniela Dias<sup>3</sup> and Adriano L. Peracchi<sup>1</sup>

<sup>1</sup> Universidade Federal Rural do Rio de Janeiro, Instituto de Biologia, Laboratório de Mastozoologia. BR-465, Km 7. CEP 23890-000. Seropédica, RJ, Brazil.

<sup>2</sup> Universidade Federal da Paraíba Campus I, Departamento de Sistemática e Ecologia, Programa de Pós-Graduação em Zoologia. CEP 58059-900. João Pessoa, PB, Brazil.

<sup>3</sup> Fundação Oswaldo Cruz, Laboratório de Biologia e Parasitologia de Mamíferos Silvestres Reservatórios, Pavilhão Arthur Neiva, Avenida Brasil, 4365. CEP 21040-900. Manguinhos, RJ, Brazil.

\* Corresponding author. E-mail: [jsimanaas@hotmail.com](mailto:jsimanaas@hotmail.com)

**ABSTRACT:** The occurrence of *Rhogeessa hussoni* Genoways and Baker, 1996 in the state of Sergipe is reported here based on an adult female collected in mist nets during a chiropteran survey of the Refúgio da Vida Silvestre Mata do Junco (RVS-Mata do Junco), a 894 ha fragment of lowland Atlantic Forest. Measurements and taxonomic comments about this species are given. Despite the variability found in coloration of the ventral pelage, qualitative and quantitative characters allowed the identification of the specimen as *R. hussoni*. The present record increases to twenty-eight the number of bat species recorded for Sergipe and confirms the presence of *R. hussoni* in the Atlantic Forest biome.

The genus *Rhogeessa* H. Allen, 1866 consists of ten Neotropical species and ranges from Tamaulipas, in Mexico, to southeastern Brazil (Goodwin 1958; Nowak 1994; Peracchi *et al.* 2011). Specimens of this genus are rare in zoological collections, probably due to the difficulty of capturing vespertilionids in mist nets set at ground level, the most used sampling method in bat inventories. Therefore, there is a relative paucity of published data on geographical distribution and taxonomy for this genus (Aires *et al.* 2011). The two species of the genus found in Brazil are *Rhogeessa hussoni* Genoways and Baker, 1996 and *Rhogeessa io* Thomas, 1903 (Simmons 2005; Peracchi *et al.* 2011).

*Rhogeessa io* is known in Brazil from the states of Amazonas, Maranhão, Mato Grosso, Paraíba, Paraná, and Pernambuco (Percequillo *et al.* 2007; Bickham and Ruedas 2008; Aires *et al.* 2011; Peracchi *et al.* 2011). *Rhogeessa hussoni* occurs in southern Suriname and Brazil (Simmons 2005), where there are records from the states of Bahia, Maranhão, Mato Grosso, Minas Gerais, Pará, Paraíba, Pernambuco, and Paraná (Aires *et al.* 2011; Peracchi *et al.* 2011). These bats are small in size, with a diet consisting exclusively of airborne insects (Wilson 1973). In spite of the paucity of mensural data available for *R. hussoni* and *R. io*, differentiation between these species has been based mainly on size, with *R. hussoni* being larger than *R. io* (Genoways and Baker 1996, Bickham and Ruedas 2008).

During a bat survey at the Refúgio da Vida Silvestre Mata do Junco (RVS-Mata do Junco) ( $10^{\circ}32' S$ ,  $37^{\circ}03' W$ ), a 894 ha state reserve located in the municipality of Capela, 86 km from Aracaju, the capital of the state of Sergipe, in northeastern Brazil (Figure 1), an adult female *R. hussoni* was collected (license number: 2009.05.0603/00105-03). This bat was caught on July 19th, 2009, at 18:20 h,

in a mist net set at ground level. The RVS-Mata do Junco is an area of open rainforest with numerous clearings and surrounded by an anthropogenic matrix that includes sugar cane (*Saccharum* spp.) plantations. The specimen of *R. hussoni* was deposited under the number ALP 9656 in the Adriano Lúcio Peracchi Mammalogy Collection, at the Instituto de Biologia of the Universidade Federal Rural do Rio de Janeiro. It is a fluid-preserved specimen, with skull removed. External and cranial measurements of this specimen were obtained with the aid of caliper precise to 0.02 mm and following criteria described by Taddei *et al.* (1998).

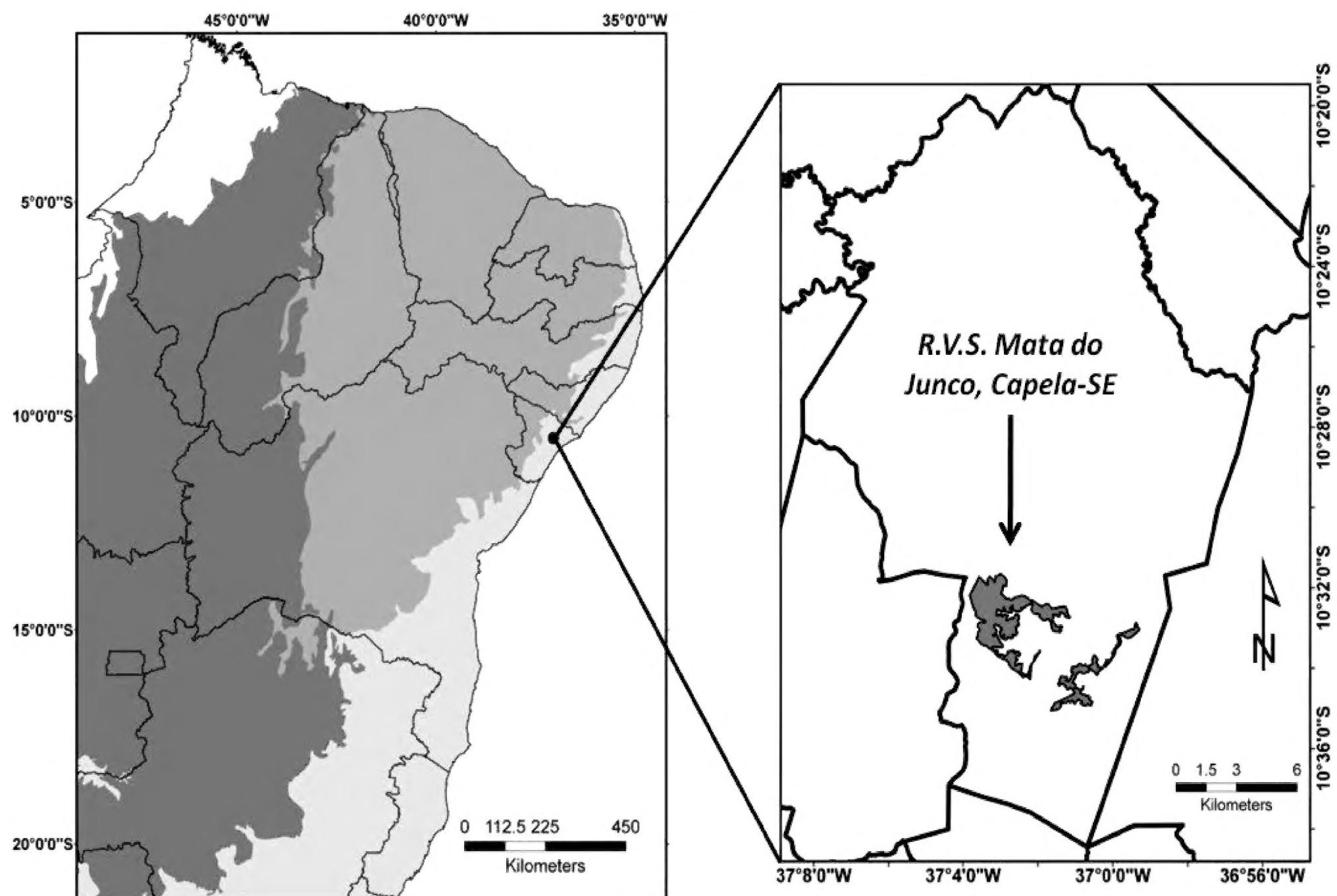
Measurements obtained for the metacarpals of the specimen ALP 9656 are above the range described for *R. io* and closer to the values reported for *R. hussoni*. Forearm and cranial measurements also agree well with the values reported by Genoways and Baker (1996) for *R. hussoni*, being generally larger than those of *R. io* (Table 1). The lower toothrow length, which is known to be larger in *R. io*, is within the range reported for *R. hussoni* (less than 5.40 mm)(Genoways and Baker 1996).

Aires *et al.* (2011) presented new locality records for *R. hussoni*, providing additional characters to distinguish *R. hussoni* from *R. io*. The specimen collected in Sergipe has forearm and greatest skull lengths, palatal and between canines breadths, and upper and lower toothrow lengths within the range found by these authors for *R. hussoni* from other localities in north-central and southeastern Brazil (Table 1). This specimen also has well-defined pads on the nose. According to Aires *et al.* (2011), the pads on the muzzle of *R. io* are weakly developed, just outlined. Regarding fur coloration, our specimen also differs from *R. io* in having a golden brown dorsal pelage, with the hair bases yellow and tips brown (Figure 2) (*R. io* has light

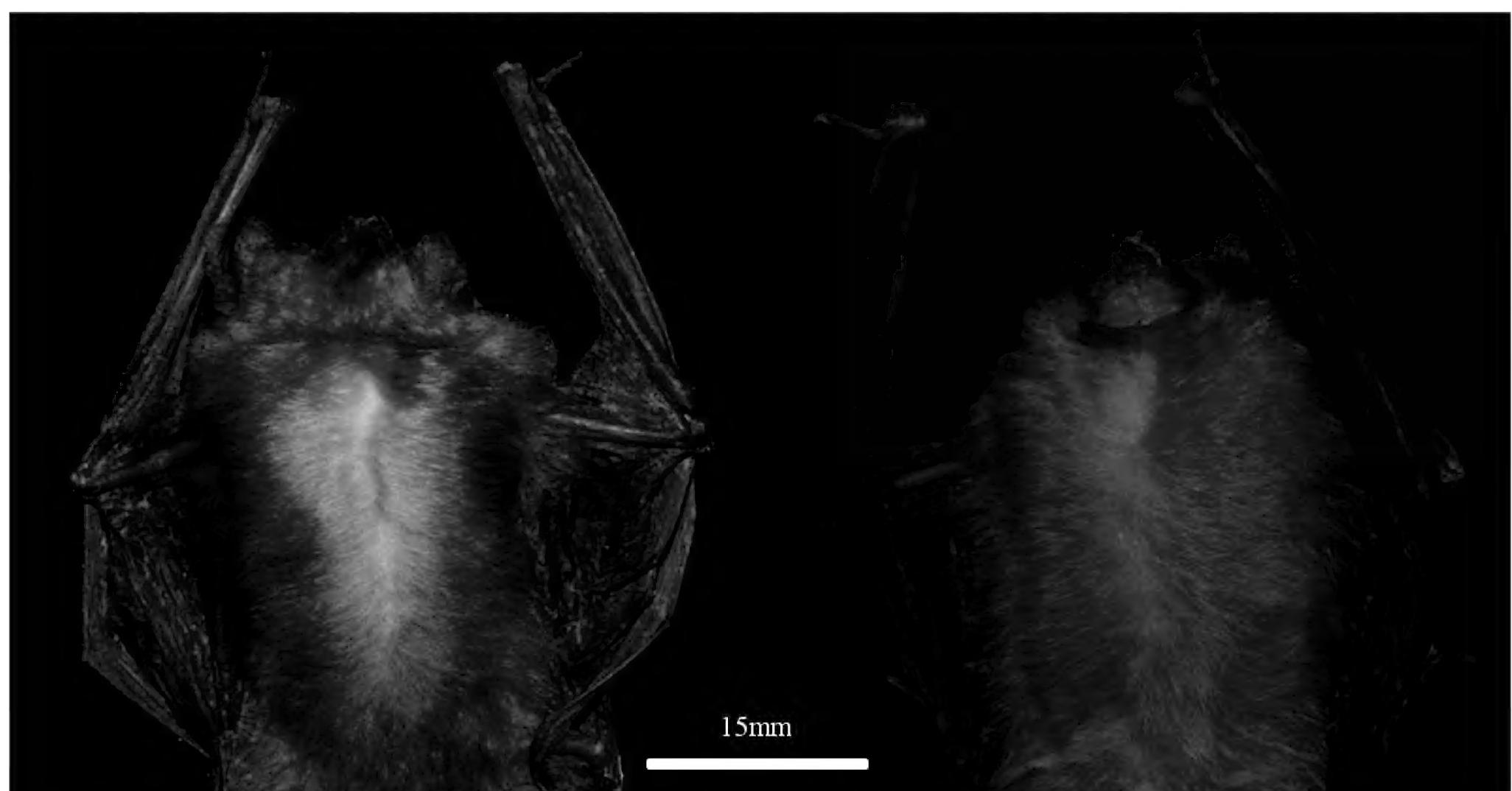
brown dorsal pelage). The ventral pelage of the specimen examined, however, is golden yellow, with poorly defined bands (Figure 2), differing from the bicolored condition (golden bases and brown tips) observed in *R. hussoni* by Aires *et al.* (2011). Despite this variability, all the other

qualitative and quantitative characters allowed the identification of the specimen from Sergipe as *R. hussoni*.

The chiropteran fauna of Sergipe is still poorly known, and few published studies are available (Alencar *et al.* 1994; Mikalauskas 2005; Mikalauskas *et al.* 2006 a, b;



**FIGURE 1.** Location of the Refúgio da Vida Silvestre Mata do Junco, Sergipe, northeastern Brazil. Biomes: light gray = Atlantic Forest; medium gray = Caatinga; dark gray = Cerrado; white = Amazon Hylea.



**FIGURE 2.** Dorsal and ventral views of the specimen of *Rhogeessa hussoni* (ALP 9656) from Refúgio da Vida Silvestre Mata do Junco, Sergipe, northeastern Brazil.

**TABLE 1.** Selected measurements of *Rhogeessa hussoni* from Refúgio da Vida Silvestre Mata do Junco, Sergipe, northeastern Brazil<sup>1</sup>; northern, central-western, and southeastern Brazil<sup>2</sup>; and Suriname (holotype)<sup>3</sup> and *Rhogeessa io* from Suriname<sup>4</sup> and Pernambuco, northeastern Brazil<sup>5</sup>.

Characters	<i>Rhogeessa hussoni</i>			<i>Rhogeessa io</i>	
	Present study <sup>1</sup>	Aires et al. (2011) <sup>2</sup>	Genoways and Baker (1996) <sup>3</sup>	Genoways and Baker (1996) <sup>4</sup>	Aires et al. (2011) <sup>5</sup>
Forearm length	28.80	28.20 – 30.91	30.20	-	27.14
Third metacarpal	28.78	24.63 – 28.10	29.00	26.20 – 28.40	25.63
Fourth metacarpal	28.56	-	27.80	25.90 – 27.40	-
Fifth metacarpal	29.50	-	28.20	26.00 – 27.90	-
Greatest length of the skull*	12.70	12.60 – 13.15	13.20	11.70 – 12.60	-
Upper tooth row length	4.80	4.66 – 4.89	4.70	-	-
Palatal breadth	2.88	2.86 – 3.19	-	-	-
Breadth across the <i>cingula</i> of upper canines	3.98	3.98 – 4.09	3.80	3.40 – 3.60	-
Postorbital breadth	3.20	3.49 – 3.80	3.20	-	-
Braincase breadth	5.72	6.23 – 6.81	5.70	-	-
Zygomatic breadth	8.28	-	8.90	-	-
Mastoid breadth	6.66	-	7.10	-	-
Length of the mandible	9.20	9.74 – 9.93	-	-	-
Lower tooth row length	5.34	5.26 – 5.34	5.20	5.40 – 5.70	-

\* including incisors.

<sup>1</sup> N = one female; <sup>2</sup> N = one male and three females; <sup>3</sup> N = one female (holotype); <sup>4</sup> N = ten unsexed; <sup>5</sup> N = one female

Feijó and Nunes 2010; Rocha et al. 2010; Rocha et al. 2011). The present report increases to thirty the number of bat species recorded for this state and confirms the occurrence of *R. hussoni* in the Atlantic Forest. The only previous record for this biome was presented by Aires et al. (2011), based on two specimens collected by Ollala inside a house, in submontane seasonal semideciduous forest in the state of Minas Gerais, southeastern Brazil, on September 5th, 1940. Additional studies will certainly expand our knowledge on the geographical distribution and biology of the bats that occur in Sergipe, as well as on their functional roles within the diverse ecosystems preserved in this state.

**ACKNOWLEDGMENTS:** We are grateful to CAPES and CNPq for respective graduate scholarships to PAR and JSM; to Secretary of Environment and Water Resources (SEMARH) for logistical support; to Isaac P. de Lima for helping with photographs of the specimen studied; to Stephen Ferrari for helpfully reviewing previous drafts of the text and two anonymous reviewers for the valuable suggestions in the manuscript.

#### LITERATURE CITED

- Aires, C.C., F.O. Nascimento and A. Césari. 2011. Mammalia, Chiroptera, Vespertilionidae, *Rhogeessa hussoni* Genoways and Baker, 1996: Distribution extension and taxonomic notes. *Check List* 7(2): 117-119.
- Alencar, A.O., G.A.P Silva, M.M. Arruda, A.J. Soares and D.G. Guerra. 1994. Aspectos biológicos e ecológicos de *Desmodus rotundus* (Chiroptera) no nordeste do Brasil. *Pesquisa Veterinária Brasileira* 14(4): 95-103.
- Bickham, J.W. and L.A. Ruedas. 2008. Genus *Rhogeessa* H. Allen. 1866; p. 481-484 In A.L. Gardner (ed.). *Mammals of South America: Marsupials, Xenarthrans, Shrews, and Bats*. Volume I. Chicago: University of Chicago Press.
- Feijó, J.A. and H.L Nunes. 2010. Mammalia, Chiroptera, Phyllostomidae, *Artibeus planirostris* (Spix, 1823) and *Trachops cirrhosus* (Spix, 1823): First record for the state of Sergipe, northeastern Brazil. *Check List* 6(1): 15-16.
- Genoways, H.H. and R.J. Baker. 1996. A new species of the genus *Rhogeessa*, with comments on geographic distribution and speciation in the genus; p. 83-87 In H.H. Genoways and R.J. Baker (ed.). *Contributions in Mammalogy: a memorial volume honoring Dr. J. Knox Jones, Jr.* Lubbock: Museum of Texas, Tech University.
- Goodwin, G.G. 1958. Bats of the genus *Rhogeessa*. *American Museum Novitates* 1923: 1-17.
- Mikalauskas, J.S. 2005. Morcegos; p. 93-103 In C.M. Carvalho and J.C. Vilar (ed.). *Parque Nacional Serra de Itabaiana - Levantamento da Biota*. Aracaju: BAMA, UFS. Biologia Geral e Experimental.
- Mikalauskas, J.S., R. Moratelli and A.L Peracchi. 2006a. Ocorrência de *Chiroderma doriae* Thomas (Chiroptera, Phyllostomidae) no Estado de Sergipe, Brasil. *Revista Brasileira de Zoologia* 23(3): 877-878.
- Mikalauskas, J.S., A.L. Peracchi, S.F. Gouveia, P.A. Rocha, M.P.F Vasconcelos and V.V. Silveira. 2006b. Período de Atividade de Morcegos da Família Phyllostomidae do Parque Nacional Serra de Itabaiana. *Biologia Geral e Experimental* 6: 11-13.
- Nowak, R. M. 1994. *Walker's bats of the world*. Baltimore: Johns Hopkins University Press. 287 p.
- Peracchi, A.L., I.P. Lima, N.R. Reis, M.R. Nogueira and Ortêncio Filho, H. 2011. Ordem Chiroptera; p. 155-234 In N.R. Reis; A.L. Peracchi, W.A. Pedro and I.P. Lima (ed.). *Mamíferos do Brasil*. Londrina: Nélio Roberto dos Reis.
- Percequillo, A.R., K.R.P. Santos, B.A.T.P. Campos, R. Santos, G.A.C. Toledo, A. Langguth. 2007. Mamíferos dos remanescentes florestais de João Pessoa, Paraíba. *Biologia Geral e Experimental* 7: 17-31.
- Rocha P.A., J.A. Feijó, J.S. Mikalauskas and S.F. Ferrari. 2011. First records of mormoopid bats (Chiroptera, Mormoopidae) from the Brazilian Atlantic Forest. *Mammalia* 75(3): 295-299.
- Rocha, P.A., J.S. Mikalauskas, S.F. Gouveia, V.V.B. Silveira and A.L. Peracchi. 2010. Morcegos (Mammalia, Chiroptera) capturados no Campus da Universidade Federal de Sergipe, com oito novos registros para o estado. *Biota Neotropica* 10(3): 183-188.
- Simmons, N.B. 2005. Order Chiroptera; p. 312-529. In D.E Wilson and A.M. Reeder (ed.). *Mammal Species of the World: a taxonomic and geographic reference*. Baltimore: Johns Hopkins University Press.
- Taddei, V.A., C.A. Nobile and E. Morielle-Versute. 1998. Distribuição geográfica e análise morfométrica comparativa em *Artibeus obscurus* (Schinz, 1821) e *Artibeus fimbriatus* Gray, 1838 (Mammalia, Chiroptera, Phyllostomidae). *Ensaios e Ciência* 2(2): 71-127.
- Wilson, D.E. 1973. Bat faunas: a trophic comparison. *Systematic Zoology* 22: 14-29.

RECEIVED: June 2011

LAST REVISED: September 2011

ACCEPTED: September 2011

PUBLISHED ONLINE: December 2011

EDITORIAL RESPONSIBILITY: Marcelo R. Nogueira